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KENT PENDLETON

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IN THIS ISSUE

PAGE

Editorial: There Couldn't Be a Better Time	3
Letters	3
It Better Be a Bearded Bird!	4
Mystery and Majesty in Washington County	6
When the Wild Birds Talk	8
More About Wildlife	10
Water Pollution	12
Conservationgram	13
Only the Quack's the Same	14
New Cooperative Hunting Areas	17
Fit for a King	18
Big Game Kill Records by County	19
Let's Cook a Wild Rabbit Dinner	20
The Drumming Log	24
Youth Afield	25
On the Waterfront	26
Bird of the Month: Mallard	27

COVER: To many Virginia outdoorsmen nothing could be more symbolic of November than a covey of well grown bobwhite quail bursting from cover resplendent with autumn colors. Our artist: Kent Pendleton, Redmond, Washington.

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There Couldn't Be a Better Time

THERE couldn't be a better time than November. The sun is gentle, the breezes fresh and invigorating. Field and woodland beckon, and there is elbow room for all who accept the invitation. Wildlife is still near its annual peak of abundance. The land is in transition as it prepares itself for winter. Shortening days make daylight hours more precious. There is much to see, and do, and feel, out of doors—much to enjoy. There couldn't be a better time.

It is a truism that people generally enjoy most the things they know most about. The sports fan knows the rules, and understands the fine points of the game, and his enjoyment is in proportion to his knowledge and understanding. And people who most enjoy the autumn fields, forests and marshlands, and the creatures that inhabit them, are the ones who know the most and understand the most about them.

The duck hunter to whom a duck is just a duck not only risks running afoul of the law, in these days when bag limits are set by species, but he misses most of the satisfaction and enjoyment which the hunting experience offers to those who know and understand the fine points of the game. That was not just a duck that held its course as it passed high overhead and disdained to come down for a closer look at the decoys. It was a *black duck*. That was not just a duck that circled and approached, only to flare off while still just out of range. That was a *widgeon*. Nor was it just a duck that came in and dropped his big webbed feet and tried to join the decoys. That was a *scaup*, and a *greater scaup* at that.

If a bird is just a bird, it is a stranger. If it is a *titmouse*, or a *chickadee*, or a *cedar waxwing*, it is an old acquaintance.

The forest is not just trees. It is a white oak here, a yellow poplar there, a hickory, a gum, an understory of beech and dogwood, and there is mast on the floor upon which squirrels and wild turkeys have been feeding, and some plants have been browsed by deer and some have not, and to him who perceives and understands such things the forest is a familiar and enchanting place.

Then there is the matter of outdoors ethics, to be learned, understood and observed. To be able to use the land and leave no mark of destruction, no trail of litter, to show that one has passed that way, is an achievement. To know and abide by the rules of clean sportsmanship, in solitude as well as before an audience, is conduct worthy of pride.

These are just some of the barest fundamentals. The field for increasing one's knowledge and understanding of the outdoors, and hence his enjoyment of it, is limitless. And there couldn't be a better time than November.—J. F. Mc.

Wants Big Bass

I have been fishing for bass for about five years. I have used several techniques, including fishing with minnows and occasionally dragging a plastic worm on the bottom. I have never caught a bass of any size, that is, not over two pounds. Can you give me any advice as to techniques that would be successful in catching some of the real lunkers?

W. A. Overly
Richmond

Fishing with minnows for bass is likely to be slow because the fisherman usually stays in one place and waits for the bass to find the minnow. Moving quietly from one likely looking spot to another and using artificial lures often produces more action. Fisherman's Information Bureau, 20 North Wacker Drive, Chicago, Illinois 60606, has a 25¢ booklet on How to Catch Fish in Fresh Water that might be useful to you, as it describes methods of fishing with spoons, spinners, surface and diving plugs, bass bugs, plastic worms, and other lures. We would add that if you catch very many two-pound bass you are not doing badly as it is, even without the lunkers. Where bass are harvested heavily in public waters not many have a chance to grow to lunker size. Many of the "real lunkers" come out of private or club ponds where the owners or members observe a self-imposed size limit and return all but the "real lunkers" to the water for further growth.—Ed.

Canned Groundhog



ENCLOSED are two pictures of a groundhog. This groundhog was killed August 1, 1968. Location: 5 miles east of Mechanicsville, Virginia. He had a tin can stuck over his head. He apparently stuck his head in the rusted out end, and the jagged edges held it on. It had been there some time because the can had formed to the shape of his head. I could hold him up by the can and he wouldn't fall out. He could not eat young soybeans that had just come up. He was feeding on soybeans 8" to 10" high by sticking the can over the bean leaves to eat.

John E. Fenner
Mechanicsville



It Better Be A Bearded Bird !

By C. H. SHAFFER
Game Management Field Coordinator

ON December 16 Old Dominion turkey hunters east of the Blue Ridge Mountains will be required to change their life-long hunting techniques during the winter open season. As a result of a Game Commission regulation, bearded turkeys only will be legal in all of the 31 eastern counties open to turkey hunting. To be successful and keep out of trouble, sportsmen will be required to practice more caution and restraint than in the past. It would be wise for sportsmen to learn what a turkey beard looks like, and perhaps plan a visit to their optometrists before the start of the season. A mistake could result in a badly depleted bank account!

The forthcoming season will not be entirely novel to hunters in selected areas in Virginia. There have been previous experiments with bearded turkey hunting in the past in several counties and on certain wildlife management areas. For many years, as a result of a legislative act, Pittsylvania County hunters have had a gobblers-only season during the fall and winter months. In recent years, bearded turkey seasons have been adopted by Game Commission action in Cumberland and New Kent Counties. For a decade gobblers only could be hunted on Camp Pickett, and a special experimental gobbler season was carried out on the Cumberland State Forest about fifteen years ago. Many other southern states have had traditional fall gobbler seasons.

It is a well-known fact that spring bearded turkey seasons

Legal game. This old gobbler is readily identified by the massive beard which extends well below the feathers at the forward part of his breast.

Leonard L. Rue III photo



started out experimentally on a small scale. Today spring gobbler hunting can be ranked among the newest and fastest growing hunting sports in the state. The spring turkey season was tested on four management areas in 1961 and 31 birds were collected. Thereafter the experiment has become increasingly popular. During a three-week period in April and May 1968, bearded turkeys were hunted in 67 counties and an impressive total of 1364 bearded birds were harvested. An estimated 15,000 avid sportsmen participated in this springtime venture. Apparently the success of the spring gobbler season was at least partly responsible for the newly adopted fall bearded turkey season.

Gobbler or bearded turkey seasons (on rare occasions adult hens will be bearded) are advocated on the theory that if the female of the species can be protected, turkey flocks should naturally increase. The wild gobbler, like the buck deer, can be hunted heavily without any detrimental effects on future turkey populations. In addition, selective hunting of the male of the species is a greater challenge to sportsmen who are usually rewarded with a more desirable trophy (20 pound gobbler versus 8 pound hen).

Among some turkey addicts the relative lengths of beards and spurs have assumed the same trophy value as have number of points and diameter of beams of deer antlers.

Admittedly, the new turkey season will present a real challenge to the Piedmont and eastern Virginia hunters. Heretofore, turkeys have been hunted in the fall and winter without any thought of prior identification in that both sexes were legal game. Most sportsmen have shot at turkeys not knowing nor caring whether their targets were hens or gobblers. Identification usually followed later at either hunting camps or check stations. Even among experts, there have often been differences of opinions, since in the case of younger birds the sexes are difficult to distinguish. Now the identification will have to be made *before* shooting, often in a split second, and there can be no arguments later; either the bird will be bearded or it will not! The hunter will either be a happy hero or a man in deep distress!

At this point it might be well to stress the obvious fact that wild turkeys can be separated conveniently into four categories: young or juvenile hen; young gobbler; adult hen; adult gobbler. Actually, there isn't a "nickel's worth of difference" in appearance among the first three classes. Externally the young hens, young gobblers, and adult hens look very much alike. Whether they are flying, running, walking or even standing still, it is difficult to distinguish these groups or individuals.

True, the young gobbler, by comparison, has longer legs and neck than his mother or sisters and he may appear darker because of his black-tipped feathers. However, the hunter seldom has the opportunity to get close enough to make these superficial comparisons. In the natural excitement of the hunt it is very easy to make mistakes.

It is likewise a fact that the young male turkey possesses a beard, but unfortunately, during the first hunting season, it cannot be seen regardless of the range. A six or seven month old gobbler's beard is a small appendage, usually an inch or less in length, which is completely hidden by the breast feathers. Even after a young gobbler is killed and the hunter can examine it closely, it often requires several minutes of searching to locate the tiny beard. A bearded juvenile gobbler will be legal even though the beard is not fully developed, but who will want to gamble without positively seeing a beard and making a positive identification?

On rare occasions the adult hen will have a beard, and if

it can be observed she is just as legal as a tom turkey. The few specimens of hen beards we have observed have been slim, narrow and consisted of a minimum number of hairs. They would have been difficult to observe under most outdoor circumstances.

The juvenile or young hens invariably will be the smallest birds in the flock. They are nondescript and perhaps some of the most vulnerable of all the turkeys in a gang. They will be completely off-limits since a beard would be an extreme rarity.

Finally, this brings us to the only 100%-reliable bearded bird—the large adult gobbler. Regardless of the season of the year these old boys wear a heavy beard which can be readily observed if the hunter will take the time to observe it.



L. L. Rue III photo

Look, no beard! This old hen turkey might look like the biggest bird in the woods when there is no other nearby for comparison.

During the springtime it is easy to identify an old male bird. As his name implies, he gobbles loudly and constantly. In addition he struts, puffs up, fans out his tail and has a prominent red-white-blue head. Often the long heavy beard swings like a pendulum from the breast of the gobbler. Some excited hunters will swear that the beard was "dragging the ground." By the time a spring gobbler approaches within gun range it usually is not even necessary to look for a beard. All the strutting and gobbling routine will have already helped to identify him as legal meat.

During the fall and winter season the beard can be observed on the old males, but the gobbler naturally doesn't go



At left is a typical old gobbler beard. Lower right is a beard from a gobbler in his second year. Upper right are three beards from young gobblers, taken during their first fall hunting season. These latter would not be visible to the hunter as they would not extend beyond the breast feathers.

through his pre-mating activities at this season. He very rarely gobbles but yelps much like any other turkey (the classic—cow-cow-cow-cow). The only positive distinguishing characteristic is the presence of the beard.

Sportsmen definitely should not depend on relative sizes of turkeys to predetermine their legality. Judging these birds by size alone would be as unreliable and dangerous as a "sound shot." Naturally, the adult gobbler is the largest turkey in the woods, but unless both sexes and all ages are together in a flock, it is easy to make a wrong identification. Rarely will the hunter have the opportunity to make close deliberate comparisons. Somehow, even the smallest solitary hen will appear gigantic during the excitement of the hunt when she is alone. Often during the fall of the year, the biggest turkey in a flock will be the old hen; she will appear much larger than her late hatched poults.

It is likewise difficult to separate the hens and gobblers from the way they call or yelp. It has been observed that each individual turkey calls differently and most turkey hunters have frequently "goofed" on voice identification.

Virginia's game biologists have been collecting data on the age and sex for wild turkeys for many years. Through outstanding cooperation from sportsmen and check station operators, a large sample of yearly kill has been accurately aged and sexed by a careful analysis of selected feathers.

(Continued on page 23)

MYSTERY AND MAJESTY IN WASHINGTON COUNTY

By HOLMES ROLSTON, III
*Asst. Professor of Philosophy
Colorado State University*

THE time has come for me to leave these shale knobs and limestone valleys that somebody, sometime, years ago, carved out of the Appalachians, drew political lines around, and called Washington County. Departure evokes memories, and memories evoke a tribute. One man, at least, has found the boundaries of the county to enclose a region that is broad and wide and rich and deep.

Thoreau wrote in *Walden*, "I have travelled a good deal in Concord." One may travel extensively in Washington County. Louis Agassiz, the consummate naturalist, once remarked, "I spent the summer travelling. I got halfway across my backyard." I think perhaps as the days have flowed into weeks, the weeks into seasons, and the seasons to years, I have travelled not yet halfway across the county.

It was on a Monday long since past that I sought out the solitude of the high, tri-county massif of Whitetop and its twin in our sister counties, Mt. Rogers. Earlier, my introduction to Whitetop was the panorama from Bear Tree Gap. Then sunny autumn colors of every hue were capped by glistening white. An early snow filled the high crestline meadow. But now she was in a grey, stormy mood. In the blackness of a gathering storm my upward steps were halted by a thunderbolt crashing too near for comfort. The air now saturated with the odor of ozone, I turned to retrace my steps, driven down by the eerie storm, but left with an abiding sense of wonder.

Returning on a Tuesday later, the mute evidence first began unfolding to me of an ancient and far greater violence of mother nature there, the rocks known as the Mount Rogers volcanics. These rocks of pre-Cambrian ages that number into hundreds of millions of years—rhyolites, basalts, tuffs—remain to testify of nature's wilder moods preceding a hundred times over the arrival of man. The wonder burned into my soul in microseconds by the fury of the lightning bolt deepened as I held in my hand a fragment of an altered lava from 500 million years, speckled with phenocrysts, and thought of the fire and fury in which these Balsam Mountains were born. Who can disentangle the enigmatic red boulder conglomerate west of Konnarock—the whence and the why of rounded granitic boulders and cobbles of aplite and greenstone all frozen in a siltstone matrix? Why is this rock here, anhydrite and gypsum at Plastereo, marcasite at Alvarado, and dogtooth spar in veins along Beaver Creek? How strange to peer into a petrographic microscope at a wafer thin section of rhyolite porphyry from the angular blockfields on Whitetop's slopes and to watch the crystals wink on and off with the rotating stage! What secrets of earth, her past and present, are hid in her wind and her rocks!

On a Wednesday now and on Wednesdays again and again, the chipmunks play outside my study window, scamp-

ering after each other when they have their fill of the hickory nuts in the church yard. Easily a sackful of the little striped fellows live within sight of the desk where I am supposed to busy myself with work, placed there either by the Creator to punctuate my studies with amusement, or by the tempter to divert my wandering mind. If Whitetop leaves a sense of antiquity, secrecy, and wonder, the memory of the chipmunks adds to life a pure and instantaneous delight.

Thursday was it?—I cannot quite recall; but the weekday doesn't matter—that I poked amongst the mosses at



L. L. Rue III photo

I investigated the clandestine affairs of a fox the night before.

Sandy Flats, reveling mostly in my ignorance. I collected a dozen to examine more closely, later to learn that I had made a discovery indeed. Not a discovery, to be sure, that would excite the world, but it was discovery enough to etch another permanent memory. Just mosses, they seemed, though what is so uncommon as a common moss—gametophyte and sporophyte, seta, capsule, peristome, operculum, and calyptra. Wherefore was so much labor spent on small things? Just mosses? But wait: the most minuscule of all, half an inch high, the trained eyes of a bryologist, Dr. A. J. Sharp, were to spot as *Campylostelium saxicola*, a rare species otherwise quite unknown in the state of Virginia and collected but once or twice in all the South. And I, only I, had stumbled over it, in a secluded spot known only to me, the moss, and God.

A wintry Friday morning once was quite consumed in business not my own, investigating the clandestine affairs of a fox the night before. I hastened to sort out his string straight tracks in the light snow, before the warming sun should erase them forever. From the den in the limestone

The Reverend Mr. Rolston is a former pastor of Walnut Grove Presbyterian Church in Bristol, Virginia, and his article was published originally in the *Bristol Herald Courier*. It is reprinted here by permission.



Hawks in migration soar high over Clinch Mountain.

bluff, to the scent post by the creek, thence through the pawpaws and up the hill toward the cornfield he went. The round of the shocks was interrupted by the pursuit of a rabbit. The rabbit, though, had escaped into the brush in a profusion of tracks. Neither I, nor, so I judged, could the cunning of the fox discover into just what bush or hole he had found his safety. So it was back to breakfast on an ear of corn. A full morning of travel that was, after a full night, and all in Mobley Hollow. I never knew you could travel quite so far so near home, an itinerary learned from a grey vixen.

It came to pass on a grim Saturday that I stood in the shelter of the church, hardly out of the furious rain, watching a fast moving front drive scud torn from larger clouds through the tree tops. The Whitetop storm the year before was born of thermals generated in the county, but here was a menacing visitor from afar. A Texas born storm was eddying eastward along the front of a mass of polar air, propagating itself across a thousand miles, driven by energies released a continent and a half away in the Canadian wastes of the Mackenzie River. Now it passed over my head, onward and eastward into the sea. How vast are the powers that range and sometimes rage over and round us in these square miles of home.

Sunday once, again in new fallen snow, early out and on the way to church, I chanced upon a compacted covey of quail, ringed tail to tail, just aside the gravel road. Surely that was a curious place to huddle together for warmth and protection. Suddenly the close knit covey, glimpsed but moments, became forever one of the pictures that I will not forget. A dozen pairs of eyes met mine in an encounter that somehow went right to the nerve of life itself.

So the weeks have flowed on into months, and the months into years.

On a January afternoon, in a pensive mood, I crouched out of a raw east wind in the lee of a tumbledown shack for another unexpected encounter, this time with a tiny chickweed blossom that had found before me the shelter of the southwestern exposure. Foolish flower, this is January! Noxious weed, why must you invade a deserted farmyard? *Stellaria media*, five cleft petals spread wide, was mute, yet in its muteness eloquent enough to stir me anew with lines from Wordsworth's ode:

"To me the meanest flower that blows can give
Thoughts that do often lie too deep for tears."

A sunny February day I devoted to unraveling the mystery—for I at least did not know whither it led—of a forgotten trail up the flanks of Holston Mountain northeastward from where it passes over into Virginia. It ended only not to end, as it linked with the all but interminable Appalachian Trail. Who would have supposed that before its

junction on the crest, it would take me by a pond high on a mountain spur? The pond was filled with a hundred—could it have been a thousand?—frogs, all arguing with voices that could be heard half a mile along the mountain-side that spring was bound to come.

But never was I quite convinced of spring until I sighted, inevitably in March, two of our county's humblest weeds and most ambitious harbingers of spring. In the pasture across from where for years I lived, March belongs to the tiny Whitlow-grass, *Draba verna*, and to the Bitter Cress, *Cardamine hirsuta*. Crowded out of the best of the spring by larger plants and grasses, they flourish earlier, doing nobody any good except themselves and me, flourishing in their diminutive way for their own inherent worth in the March wind and sun, and reminding me year after year that spring simply could not be gainsaid. They disappear the other eleven months, presumably as the microscopic seeds lie fallow in the earth. But return they will March after March after March until the sun is past a century.

Well do I recall my initiation into one of the secrets of ten thousand Apriks on Iron Mountain. I lugged back from the trail up the Cuckoo a lonesome plant, a sizeable clump of narrow, dark green leaves with a simple white flower at the summit of a scape. It had a naked, uncommon look. I, then the newcomer here, found that I had presumptuously uprooted an inhabitant of that locale for a century of centuries. This was Frazer's Sedge, *Cymophyllus Fraseri*, a relict species from geographical antiquity. Its structure is primitive. Only a few plants survive the pressure of competition that evolution has since developed. Reproducing unchanged while all else has changed round about it, Frazer's Sedge has been abandoned and by-passed, reduced to an anachronism and counted among the dozen rarest plants in our area.

The woods come alive in May, and here my every May has been crammed with beauty; the brilliant crimson of Fire Pink, *Silene virginica*; the delicate white of Rue Anemone, *Anemone thalictroides*, the lacy look of the Foam-flower, *Tiarella cordifolia*, or the dainty but vast profusion of Fringed Phacelia, *Phacelia fimbriata*, a specialty of these southern mountains that finds its northernmost limit along our county's high northeast boundary. The Flowering Raspberry, *Rubus odoratus*, has a purple all its own; an alternate shade belongs only to the violet Wood-Sorrel, *Oxalis violacea*. Orange is monopolized by the Flame Azalea, *Rho-*

(Continued on page 22)

The author (left) and T. W. Finucane at Mendota firetower during a fall hawk migration.



THERE was an amiable conversation going on in the dogwood tree outside our window. The day was wintry with the frosty touch of the approach of a snow-front. A flock of black-capped chickadees, completely at ease with the weather, tossed back and forth bright, cheery-sounding remarks. There would be a friendly silence, then the talk continued in fluent notes of great variety and with a wide range in pitch. There were many shurred consonants such as "s-thit" or "s-chiz." Not once was heard their familiar song, "Chickadee-dee." This was bird talk.

Crows are at home in our trees. We have heard their "Caw-Caws," uttered in every note of the scale to proclaim alarm, anger, or contentment. Now in the winter they like to sit in a small group on the rail fence or the close-by oak tree. Occasionally their voices are low and seem confidential. The sounds, "Shuck-shuck-crawk," are heard often. Again, they act quarrelsome and the notes are loaded with abuse and contempt. We have heard the same ill-temper in two crows that curse each other across the field. One utters

order to establish his territorial rights, drive off intruders, and advertise for a mate. Some birds' songs are of great melodic quality and angelic purity; others seem discordant, harsh and repetitious. Generally the meaning is the same. Singing plays an important role through the courtship, mating and nest-building period. After the singing ends, there is bird talk.

Most bird species are social. This means more than merely staying together; it means extra protection for the group. A family or species claiming a particular home range helps to give cohesiveness to their life. This type of social behavior has many benefits. Predators may be warned away by an alert lookout, but if there is an enemy attack it is met by combined forces. The explorers or scouts of a bird family may find new food or water resources and attract the others.

As in all of social life there must be means of communication. A bird's language has many parts—voice, action, feather display and habitual devices of the bird's life. Birds



When the Wild Birds Talk

By KATHERINE W. MOSELEY
Rixeyville

what seems the utmost vilification; the other shouts the same oath in repetition but with significant inflections. This, too, is bird talk.

Birds do not really articulate. A bird's voice comes from its throat as does ours. Our voice is produced in the upper part of the windpipe in the larynx. Birds do not have a larynx. Instead, the bird's voice comes from a soundbox called the syrinx located at the base of the trachea. Birds that have no syrinx, such as the American vulture, are silent except for a hissing sound through the nostrils and an occasional low grunt. Men have managed to teach some birds to mimic recognizable words. Parakeets and parrots are the best examples. The mynah bird, which is tropical and a relative of the starling, also mimics human speech.

Most of us are so conditioned to the idea that birds only sing or call that it comes as a surprise to learn that bird-song is not constant and is purely functional and completely fundamental. It simply means that the male has taken possession of a suitable nesting area and sings vigorously in

that roost in groups at night or travel in flocks through the day have urgent calls to alert the unit. Young birds have calls of hunger and fright. Parent birds have special protective notes for their young. Migrating birds often utter special contact sounds.

So it would seem that bird language deals largely with the never-ending search for food, alarm concerning enemies, flocking regulations, child-parent cries, and the native song which is related to sex and aggression. To these must surely be added dialogue.

The ordinary backyard hen is a good example. Hens lead their chicks to food with maternal clucking. She gives a high-pitched hysterical cackle of alarm if frightened, an angry squawk if bothered, a contented cackle after egg-laying, and the typical "hen-party" chatter around the food trough.

Whistler swans are family birds and stay grouped. They are so called because of their soft whistles made in flight. That they communicate is evident when they land to feed.

Swan scouts guard the flock as it feeds with heads under water. If an alarm is given, heads pop up and the birds face into the wind ready for a quick take-off. When they are at ease in the marshes they talk or at least make noises suggestive of speech substitutes.

Our eastern bobwhite who calls his name, or so we interpret, is an interesting vocalist. His bobwhite call is usually that of a male seeking a female. If he is lucky, he hears the answering, lovely, four-syllabled whistle of the female.

The quail have a "gather" call used to bring together wandering birds. The birds of a bevy are fond of each other and keep together if possible. When scattered they commence their plaintive two-syllabled call and are not satisfied until reunited. They voice a soft, clucking "ku-ku-ku" as the flock feeds, a kind of subdued twittering conversation.

The house wren's song is a bubbling torrent of ecstasy. There was never a more tireless singer until it is disturbed or the nest is threatened. Then the song becomes a harsh, grating racket. The piercing, scolding notes of both male and female can usually put to flight the enemy. The male house wren has an engaging habit of singing with a bill full of insects as it approaches the nest to feed the young. The song in this instance is surely baby talk to stimulate a feeding response in the youngsters.

The nuthatch whistles its song of "kweek wee" most eloquently in the early spring months, but the little feathered acrobat uses entirely different notes all of the year when in the company of others of the nuthatch clan. The most frequently used conversation word is "Twit." Either a question or an answer. If the nuthatch is alarmed, it shouts in a nasal twang, "Quarrek," with many rolling r's.

The mockingbird, the melodious songster, has also call

notes and belligerent phrases of sinister harshness. The neatly groomed grey-dressed bird seems more tyrant than a lovely, lyrical music-maker.

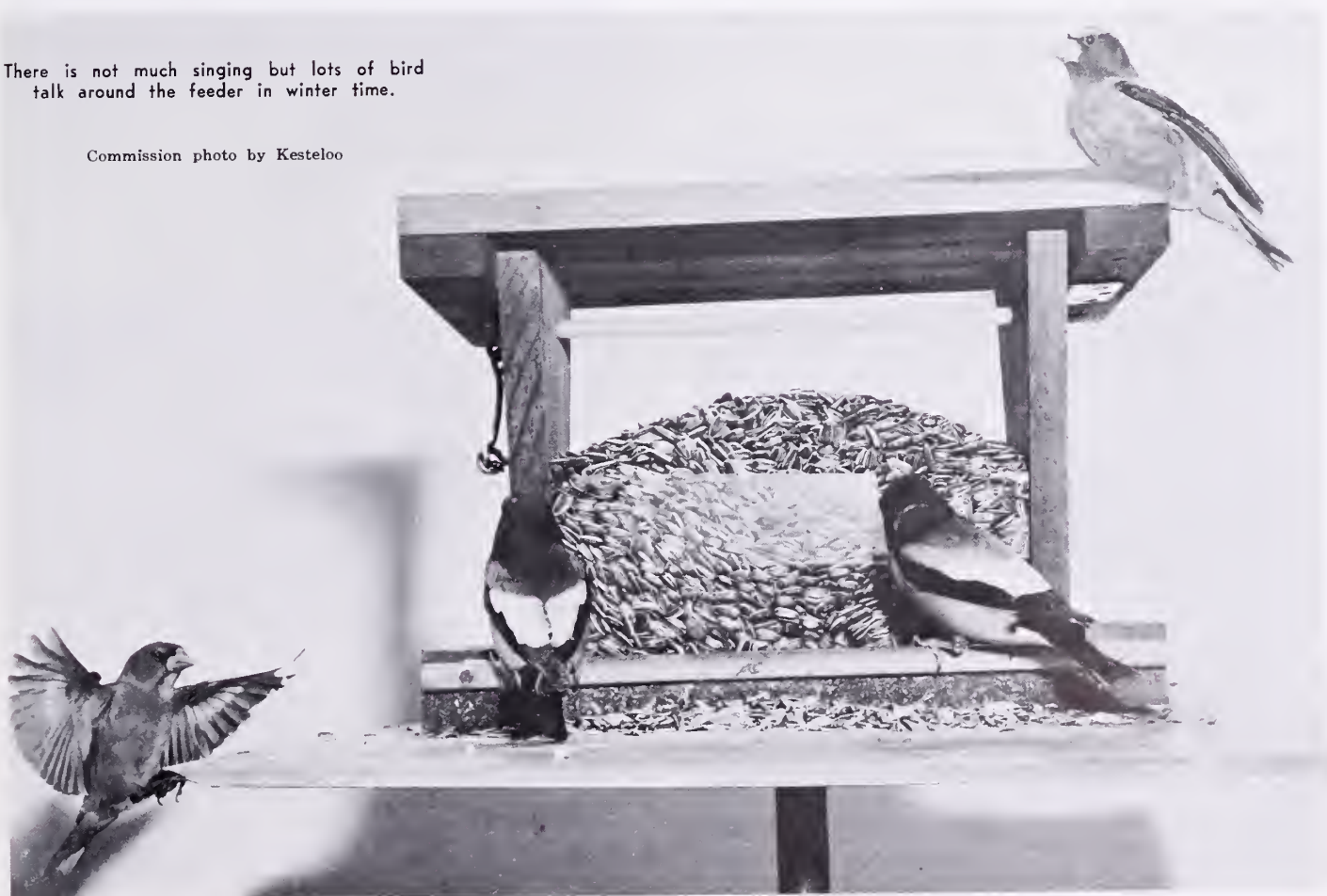
No bird that we have has so varied a repertoire as the robin. The softly warbled morning song, the throbbing love song, are very different from the sharp notes that register fright, indignation, and warning to take flight. We have seen them drunk on over-ripe wild cherries, and as they wallow in the birdbath even their clear voices are slurred! The sweetest sound is the soft murmur as they settle for the night, which could be soothing bedtime talk.

Bird-watching is so pleasurable there seems little that could be added to make the hobby more rewarding. Winter birding is the time to become better acquainted with the visitors at our feeding stations. There is less song but much more bird talk. We have tried to write down, using phonetic spelling, some of the calls and conversation we hear. Many of the notes from the bird's throat lend themselves to easy syllabication: the blue jay's raucous "Jay, jay, jay." The cry of the tufted titmouse, "Teeter, teeter." The towhee is around most of the winter. Usually people hear the call-note, "che-wink," which is the towhee's second common name. I hear "she-wont." The cardinal calls "What cheer" to the world. He says, "Come here" to me. That, of course, is the frustration in trying to interpret bird talk. Different people hear different words in the phonetics of bird language.

There is no way of entering a bird's mind and life except through our sensitivity and our own experiences with words, gestures, and facial expression. So it is impossible to know exactly what the wild birds say when they talk. But, oh, how I wish I knew what the black-capped chickadee discussed in our dogwood tree.

There is not much singing but lots of bird talk around the feeder in winter time.

Commission photo by Kesteloo



More About Wildlife

By RALPH C. CLIFFORD
Plano, Illinois

MY article, "Interesting Facts About Wildlife," published in the June, 1967, issue of *Virginia Wildlife*, brought me many complimentary letters from nature lovers, of course pleasing me no end. Not one of the writers took exception to my statements, but one kidded me considerably in his very pleasant letter, and closed by saying, "You don't dare write more along the same lines—we'll trip you next time! Or have you told all you know?"

This challenge I can't ignore. In looking back thru forty-odd years as an outdoorsman, I believe that I've come up with some more interesting facts about wildlife. So readers, check out what follows. If you go afield you'll find plenty of exercise and have a lot of fun. Or peruse your nature books if circumstances or bad weather keep you indoors. Either way, should you prove me wrong, I'll present you with a beautiful matched set of rubber-bladed screwdrivers!

. . . Probably the most persistent and adaptable to civilization of all North American animals is the coyote. He originally lived in northern Mexico, but has extended his range to Alaska and eastward to many of the seaboard states. . . . Bitterns depend on camouflage instead of flight when danger threatens. They will freeze in a reedlike pose, body, neck and bill pointed skyward, and even sway with the reeds in the wind. . . . While picking in the ground for food the woodcock can see in a full circle without moving its head. . . . There are about a hundred species of the perch family, with the walleye being tops of the clan. . . . The bald eagle often harasses the osprey, an expert fisherman, into dropping its catch, which the eagle retrieves in mid-air. . . . If not disturbed, diving ducks will keep an open patch in an ice-covered pond by continually swimming and splashing to roil up the warmer water from the bottom.

The wily bobcat knows a trick or two when it comes to eluding hounds.

L. L. Rue III photo



L. L. Rue III photo

The adaptable coyote has extended his range considerably. This one was killed in New Jersey.

. . . A wily bobcat will lead pursuing dogs in wide circles, even following his own tracks in snow. . . . The old squaw duck comes from the Arctic tundras, about as far north as birds can get. . . . Nuthatches do their tree-trunk foraging working downward. . . . All wild fowl fly much higher in good weather than in bad. . . . Bears must have excessive fat on them to live thru winter hibernation. In late fall a lean bear, feeling his urgent need, becomes irritable and very dangerous. . . . Although Canada geese weigh as much as six times more than mallards, etc., they eat far less than the gluttonous ducks. . . . The American oystercatcher, with a deft movement of his bill, can open and clean out a mussel in twenty seconds, which is much better than I can do with a knife and two hands. . . . The duckhawk merely loafs at sixty-five miles an hour, but when striking for its prey may be doing two hundred. . . .

Beavers eat the bark of nearly any small tree which does not contain pitch. Though poplar is their favorite, they are smart enough not to store it in winter feed beds because it does not remain good as long as the bark from many other trees. . . . Each year, when the Alaskan salmon run upstream to spawn, the great brown bears come down from the mountain slopes to feast on fish. An adult bear will consume fifteen to twenty salmon every day for weeks. . . . The spruce grouse is very aptly nicknamed "the fool hen."

It will lead a hunter to its perch by its silly, giddy clucking.

If several houses are put up in a wren's territory, the male will get his dander up and fill most of them with debris. . . . Grebes build floating nests of decaying vegetation, and somehow moor them to grass and reeds. . . . For some unknown reason bears are wild hogs' mortal enemies. In Arkansas wild boars got to be such a nuisance that black bears were imported from Manitoba to help control them. . . . The Baltimore oriole is perhaps the most skillful nest builder of all our birds. The female weaves the dangling nest, and her handiwork will survive the most severe storm. . . . The great, mighty-voiced trumpeter swan, once using our flyways by the hundreds of thousands, but almost extinct in the early nineteen thirties, is slowly making a comeback. From less than a hundred in 1930, they now number one thousand. . . . If it came to a vote, we would probably choose the largemouth bass as our national fish, because its range covers most of the United States, and somewhere in the land it is waiting to be caught every day in the year. . . . Weasels are not social animals, but I've seen them pack-hunting, six to ten close together, and always single file. . . . Mourning doves are short-lived, and the population renews itself every three to four years. They are also the only North American bird to nest in every state in the union except Hawaii. . . . Since ten years after the Pilgrims landed, the North American wolf has had a bounty price on his head. Yet somehow he has managed to survive, and at long last is now being protected in some areas. . . .

It takes around five years for a lobster to grow to edible size. . . . Obedience means survival to a fawn, and it will lie in complete immobility at its mother's command. . . . Bluegills will spawn from May till July, but only the males stick around to guard the eggs. . . . Like the cowbird, Mrs. Redhead Duck has parasitic habits, preferring to lay her eggs in another duck's nest. She may even fight her way to sit side by side with another hen, determinedly laying her eggs before retreating. . . . Mountain lion kittens are born spotted, but change to a solid tan at maturity. . . . Our only native stork is the wood ibis of the Florida Everglades. This great bird soars a half a mile or so in the air and can

Baltimore oriole and elaborate nest.

L. L. Rue III photo



L. L. Rue III photo

Obedience and immobility often mean survival to a fawn.

then glide without effort to feeding spots as far away as twenty miles. . . . The male sockeye salmon goes thru an astonishing spawning transformation. Normally silvery colored, with a blue-black back, he gets grotesquely hooked jaws and a decided humped back. His head becomes yellowish green while his body turns bright red. . . . Misnomer in nature: the sparrow hawk never preys on sparrows. Its diet consists almost entirely of large insects and small rodents. . . . The female catfish lays from three to eight thousand eggs. Once spawning has taken place, the male drives Mama away from the nest and guards the eggs until they hatch. . . . All songbirds change every feather at least once a year. . . . Bears regard ants as a great delicacy, and work hard on warm days to find them. The ants, careful nurses, bring up their eggs out of the ground to warm them, then stand guard over them under a flat stone or piece of bark; thus the foraging bear finds his tidbits. . . . Since wolves, and most big predators, have become scarce in our country deer have no serious wild enemies. Their greatest—and growing hazard—is the estimated fifteen million homeless and feral dogs roaming the fields and woodlands. . . . Although the mallard drake's voice box is larger than the hen's, it is muted. Mrs. Mallard does all the quacking. . . . And there are about forty species of ducks inhabiting North America.

For those readers not especially interested in wildlife, but who like to check the written word from a car window or the comfort of an easy chair, I'll say that on a fine, clear day you can see into seven states from the top of Lookout Mountain, Chattanooga, Tennessee. They are Tennessee, Kentucky, Virginia, North Carolina, South Carolina, Georgia, and Alabama. . . . The great Potomac river got its name from the Algonquin Indians (Pocahontas tribe). They called it "Patawomeke." . . . The early colonists discovered bog-iron in the Massachusetts swamps, and in 1612 a crude iron works was constructed. The first casting was a huge iron pot, which soon became the most essential possession of the pioneers, being used in making salt, soap, candles, maple syrup, and for rendering, butchering, boiling home-spun clothes and cooking! Probably our best known early-blooming tree is the flowering dogwood, though the "flower" is misnamed, as the blossom is really a tiny cluster of true flowers surrounded by four white leaves which look like petals, but are not. It has been popularly named Missouri's state tree, the state flower of Virginia and North Carolina, and the provincial flower of British Columbia, that I know of. . . .

My offer of the rubber-bladed screwdriver set does not apply to the above paragraph!

WATER POLLUTION

By PHYLLIS DIANE TOMLIN

Big Island

ONCE the mighty waters of the Niagara Falls appealed only to the eye and the ear. Now pollutionists have something for the nose. Several years ago the citizens of Dallas, Texas, were compelled to buy a carton of water at the same price as was charged for a carton of milk. Six million people in the city of Calcutta use the foul water of the Hooghly River. The Jordan, Israel's main fresh water source, is no longer fit for consumption. These problems are the result of water pollution, which has become so acute that the chairman of the Senate Committee on Water Resources, Robert S. Kerr, stated that we may need "a mermaid with a broom" to help clean up our dirty waters.

Most pollution problems can be classified in one of three major categories: sewage drainage, industrial waste, and silt pollution.

The drainage of sewage into the Mississippi River is one of the major problems in New Orleans. Although this has not caused material deterioration, it is an ever-impending problem because of growth in population, industry, and demand for recreational waters. Special treatment processes and facilities have been developed to eliminate from sewage harmful substances, which effect both man and wildlife. Another New Orleans problem is the leakage of sanitary sewage into the storm drainage system. The combination of these drainages increases the volume of the flow and usually exceeds the capacity of the treatment facilities. The bypassed liquid, which contains both human and land wastes, overflows into the receiving stream. In some cases the river flushes the impurities downstream. But in cities of the tidal areas, such as Richmond, Washington, and New York, the rivers do not clear up as fast. This causes pollution of the water sources and bathing beaches. Facilities for separation of storm and sanitary drainage have not been developed yet, but research has begun.

The Great Lakes region is the fastest-growing industrial complex on the continent because of its fresh water. However, this fresh water is polluted by wastes from many industries. One of the most damaging waste products is fertilizer, which, because of the phosphates and nitrates in it, promotes the growth of algae. Algae themselves are not poisonous but in great quantities they are a menace. As they die and sink to the bottom, the process of decay uses up the oxygen in the water. In 1965, the bottom layer of Lake Erie was depleted of dissolved oxygen and as a result nothing could live in it.

Most sewage treatment processes leave small amounts of nutrients in the water. To keep these nutrients from becoming excessive in quantity, new types of treatment processes would have to be developed. In fact, the Federal Water Pollution Control Administration has already granted Prince William County, Virginia, money to carry out pilot-scale tests of nutrient removal processes. Fairfax County is also planning to do research on nutrient removal.

A new type of industrial waste is thermopollution, a product of atomic plants. These plants drive oxygen from the water and thus make it impossible for fish to survive.

The Potomac River is a victim of both algae and silt pollution. This pollution starts with the removal of the topsoil and ends with the strangling of the rivers with ooze.

These silted rivers become flood prone because they are choked with muck and cannot carry off flood waters. Settleable solids form deposits on the stream bottom which smother organisms, destroy spawn beds, blanket bacteria, and interfere with recreation and navigation. Solids that do not settle diminish light penetration and prevent photosynthesis and thus decrease the amount of food for the fish. The temperature is lowered and so is reproduction. Solids also interfere with industry. To prevent this problem, man must combat erosion.

To have a fresh water supply we will either have to turn to the sea or clean up our waterways.

Key West, Florida, was the first city in the United States to obtain its complete water supply from the sea. Kuwait, Curacao, and Israel get their water from the sea; and it is predicted that in 1973 Los Angeles will start using sea water. Vice President Humphrey said, "Desalination will eventually yield benefits as great as those bestowed by the development of electricity."

What will the cities and counties do that cannot afford to build a desalting plant or are situated in a location where it is impossible to obtain sea water? The only reasonable alternative would be to clean up the polluted waterways and keep them clean. This is not an impossible task. In earlier years the Ruhr River in West Germany was polluted by seepages from coal mines which interfered with its flow. Now it is the clearest major stream in West Germany, although it is threatened by sewage from 1.5 million people and wastes from coal mines and steel mills and other factories. Because of long-standing campaigns against pollution, the river can be used for swimming, boating, and fishing. One official stated that the success in cleaning up the Ruhr shows what can be done when people band together and operate relatively free from government interference.

In the United States there are programs, laws, and people working to prevent pollution. There is an intensive nationwide federal program heavily supported by national wildlife organizations and citizen groups to restore polluted streams so as to reduce existing health hazards and to preserve water resources for future needs.

In Detroit City a comprehensive and regional program for cleaner water is in operation. In Virginia, as in other states, we have a State Water Control Law. Its purpose is to: (1) safeguard the clean waters from pollution, (2) prevent any increase in pollution, and (3) reduce existing pollution.

There are two main obstacles that block action on the pollution problem. One is financial. This problem could be remedied if industries, private organizations and citizens would donate, lend, or raise enough money to cover the expenses. This brings about the second problem—cooperation. Secretary of Interior Udall, stated, "We've got the attitude problem licked. The thing to do is look seriously at how to get the job done."

Perhaps the problems may best be summed up in the words of Dr. Langford: "Man's standard of living is going up and his ability to create waste is going up much faster. We've got to find ways to handle it. If we don't, we will eventually suffocate on our own waste."

CONSERVATIONGRAM

Commission Activities and Late Wildlife News . . . At A Glance

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MUSKIES STOCKED AROUND STATE. Approximately 8,000 muskies, 9-12 inches long, were stocked by the Game Commission in waters around the state during late September. Some of the muskies were hatched from eggs taken from adult Virginia-reared muskellunge at the Marion Fish Cultural Station this spring, with others obtained from out of state.

Waters which received muskellunge at this time included the Shenandoah River, Lake Albemarle, Lake Smith, Lake Brittle, Lake Burke, Leesville and Smith Mountain Reservoirs, Lake Conner and Lake Nelson. Anglers fishing in Smith Mountain Lake, the state's hottest muskie waters to date, began taking quite a few in the 10 pound and up class during the cooler weather of early fall. The minimum legal "keeper" size is 26 inches.

4.5 MILLION SQUIRREL, RABBIT, QUAIL BAGGED. It is estimated that Virginia hunters brought home a combined total of nearly 4.5 million squirrels, rabbits and quail during the 1965-66 hunting season, based on the results of a Game Commission mail survey involving some 2,472 hunters. Squirrels were the most popular of all state game, involving the most hunters, the greatest amount of effort and the largest kill, some 1,941,862 animals. Rabbits ranked second in both number of hunters and effort expended. Deer hunters were the third most numerous group, but they ranked fourth in hunting effort while quail hunters ranked just the reverse, fourth in number but third in effort.

Questionnaires were sent to 5,386 Virginia hunters, including all license types and all geographic regions. The 7-page form was designed to measure the hunter's participation in hunting the various species, his license-buying habits and his bag. The 46% return was considered good. Statistical planning and analysis of the data was handled by the Southeastern Cooperative Fish and Game Statistics program at North Carolina State University under the direction of Professor Don W. Hayne. The Virginia Game Commission, along with those of 12 other southeastern states, contributes to the statistics unit which specializes in wildlife research projects.

An estimate of 116,032 raccoons bagged during the year, nearly 5 apiece for the estimated 23,477 hunters, was a surprising statistic. Another interesting figure was the estimate of over 15,000 hunters who bagged an estimated 121,473 doves during the second half of the state's split dove season. Spring turkey hunters represented about one-third of the number that went after the big birds in the fall.

Present plans call for the survey to be repeated following this hunting season and every 2 or 3 years, thereafter.

ESTIMATED NO. OF HUNTERS, EFFORT AND BAG BY SPECIES FOR 1965-66 HUNTING SEASON

Species	Total No. of Hunters	Total Man Days Effort	Total Kill
1. Squirrel	159,838	1,232,917	1,941,862
2. Rabbits	134,477	898,777	1,176,811
3. Quail	86,713	710,095	1,380,405
4. Deer	109,017	646,979	30,755
5. Bear	18,830	84,840	509
6. Turkey (Fall)	37,138	164,356	4,539
7. Turkey (Spring)	11,954	28,962	658
8. Grouse	34,454	147,190	85,759
9. Dove (Early Season)	52,045	261,062	1,247,874
10. Dove (Late Season)	15,085	49,080	121,473
11. Ducks	16,362	82,359	86,113
12. Coots	1,563	5,452	2,896
13. Geese	7,534	35,155	11,032
14. Woodcock	9,513	39,708	42,136
15. Raccoons	23,477	214,075	116,032
16. Marsh Hens	2,241	14,757	17,834
17. Fox	25,955	156,575	41,423

THE coastal duck hunter, accustomed to a sturdy blind, and aided by lifelike decoys and a throaty call, wouldn't recognize the sport as it's practiced on Virginia's inland rivers. Oh, it's the same game—the ancient art of waterfowling that has thrilled generations of Old Dominion hunters, and inspired so many wildlife artists to some of their best work; but the blinds, the decoys and calls, the marshes, and the tangy smell of salt air, give way to canoes or john boats, a winding river, stretches of tricky fast water, and air that is thin and spiked with the ingredients of frostbite.

Just the babble of duck talk, floating in on the early morning air, is there to remind the hunter that his quarry is the same.

On rare days a limit of ducks may come quickly and with a minimum of effort, but success is more likely to be preceded by getting out of bed in the bitter cold of a winter morning, cracking the ice at the river's edge to launch a boat, and hours of paddling—hunched low in the boat—while attempting to get within range of the wary river ducks.

Smart black ducks, prized mallards, and beautiful little wood ducks are the species most common on Virginia's inland rivers. However, gadwall, teal, and pintails often show up on the larger rivers and lakes. Blacks, mallards and wood ducks frequent all types of water from major rivers and lakes to small creeks and farm and beaver ponds.

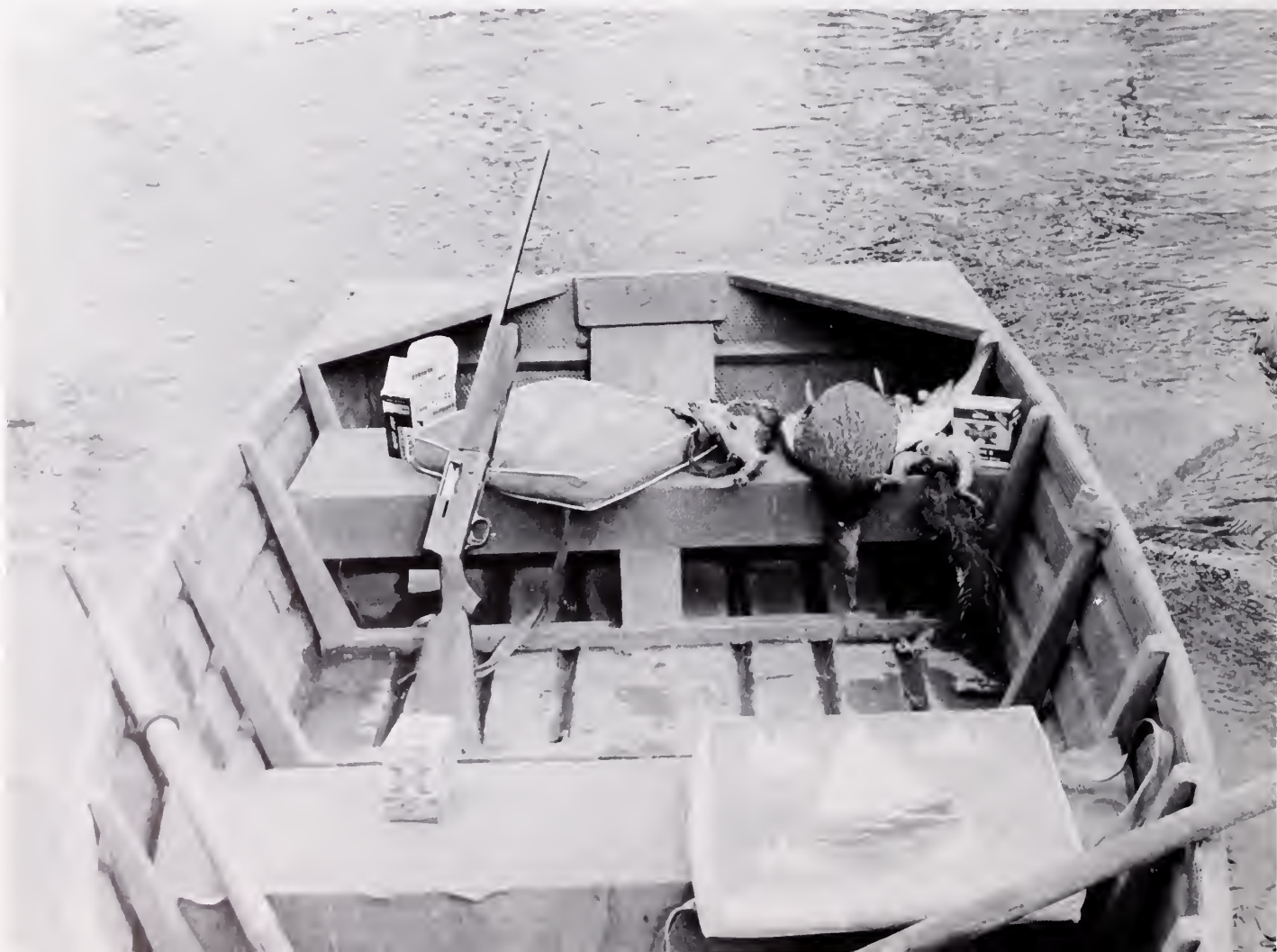
The most popular ducking in inland Virginia is the river float trip—jump shooting as it is usually referred to. It means sneaking within shooting range of the quarry, and hoping for a shot as it leaves the water, as opposed to wait-



Only the QU

By B

Boat, gun, ammunition and a winding river produced this fine black duck and couple of squirrels.





CK'S the Same

GOOCH
oy

ing in a blind for the ducks to come within range. Jump shooting also includes walking along a stream bank, and flushing ducks in this manner, but the use of a boat is more popular.

Any stream large enough to float a small boat is a good prospect for a jump shooting trip. On the smaller ones wood ducks and blacks seem to be more common than the other species—or at least that has been the case in recent years.

The hunter needs a stretch of river with good access and exit points, and he should not gauge his travel time by a summer fishing trip. Duck hunting is a faster moving sport. The water is higher during the waterfowl season and flows more rapidly. A hunting trip will normally consume no more than half to three-quarters of the time it would take to fish the same stretch of river. Access points developed by the Commission of Game and Inland Fisheries for anglers, ferry slips, bridges—all make good points to launch a boat, or take it from the river. Most county maps give most of this information.

Duck hunters use canoes or small metal boats. They have a tendency to be noisy, but are light and easy to handle, and tough enough to take the punishment a rock-strewn river can dish out. The boat should be painted a subdued color—one that blends with the winter foliage and does not reflect the bright sunlight. Many hunters use camouflage paint, but any dull color will serve satisfactorily. The boat should be large enough to transport two hunters.

There is no perfect solution to the choice of a gun. Jump shooting, for the most part, calls for fast gun handling. It's a lot like quail shooting. The first requirement is a gun

Ferry slips make good access and egress points for the river duck hunter.



that fits—one that comes up well, and permits the hunter to swing on a swift target. But no gun is ideal for the close shots, the ducks that flush from cover just in front of the boat, and also satisfactory for long shots. The latter call for a close shooting gun that will reach out and hold a good pattern. The river hunter gets both opportunities. In the hands of an expert a full choke gun is probably the best choice. The mediocre shot needs a more open bore, however—a modified choke, or even an improved cylinder if he is willing to limit himself to the closer shots.

Size 6 shot are fine for close ranges, but 4's are needed for the way out shots. High base loads are recommended for both. Many hunters load their automatics or repeaters with a 6-4-4 combination. However, the automatic man is handicapped if his first opportunity is a long shot! About all he can do is chance the 6 and then get off a fast second shot. The hunter armed with a double is a little better off—



Mallards are a favorite of the inland river duck hunter.

if his gun has a selective trigger.

A boat, gun and ammunition pretty well equip the jump shooter.

On rare occasions a motor may be handy for running upstream for a cripple, or to float down the other side of a productive looking island. A motor may not be used when actually hunting, of course, and many jump shooters do not use them at all.

A big jug of hot coffee was never more welcome than on a cold jump shooting trip. Clothing should be of subdued color, and appropriate for the weather. The feet, particularly, are vulnerable to the cold with just a thin sheet of metal

separating them from the icy water. Thermal or wool socks and well insulated boots or shoes are a must in cold weather.

The hunter who paddles merrily down the middle of a stream isn't going to get many ducks. Nor is it a good idea to concentrate on the ducks in the middle of the stream. They are almost impossible to get within range of. Some hunters camouflage the bows of their boats with grass or other vegetation and manage to drift slowly within range, but the majority of the shooting opportunities come from birds flushed from the shoreline.

River ducks congregate in pairs or small flocks, and seek the protected areas close to the banks to sun and rest. These are the birds that furnish most of the sport on a jump shooting trip. Look for them in small patches of quiet water behind boulders, fallen trees, accumulations of debris, and in small pools of water that cut deeply into the river bank. Jumped from these areas, the ducks swing out over the water and usually head downstream, giving the hunter a good shooting if he has managed to get close enough before they flush.

The successful hunter hugs the shoreline as close as possible, and uses any cover that is available. He takes advantage of every bend in a winding river, keeping on the inside



Hot lunch on a cold jump shooting trip. Hunters should wear camouflaged clothing or colors of a subdued hue.

curve, and using the protruding shoreline to conceal his approach from ducks he hopes will be around the bend.

As any waterfowler knows, the winds have a lot of effect on the flight patterns of ducks, but river winds are extremely variable and not too predictable—particularly on a meandering stream that swings from one point of the compass to another. Ducks prefer to rise into the wind, and if there is a strong one blowing down the river, they may flush upstream instead of down. This can give the jump shooter some rare pass shooting.

Jump shooting requires teamwork. A pair of hunters take turns—one in the stern, paddling and handling the boat, and the other seated in the bow always alert for a shot. The stern man may get a shot once in a while, but the safety factor rules him out most of the time. Both should be good boat handlers and proficient swimmers. Dunkings are rare, but they are a possibility to be reckoned with. Life preservers minimize the risk.

As is true of most forms of outdoor activity jump shooting is a little risky, but a common-sense approach to obvious dangers reduces the risk considerably. And jump shooting for ducks is well worth the little that is left.

NEW COOPERATIVE HUNTING AREAS



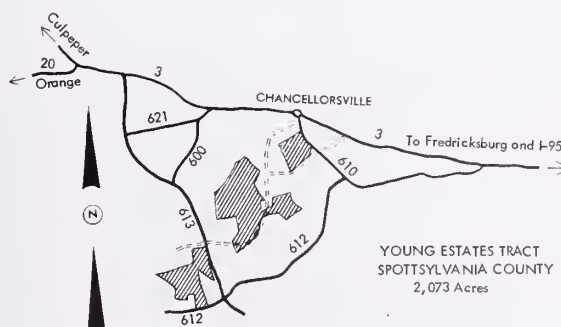
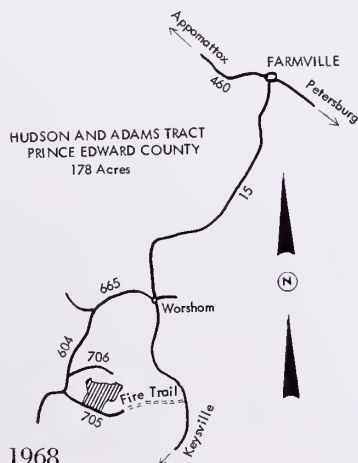
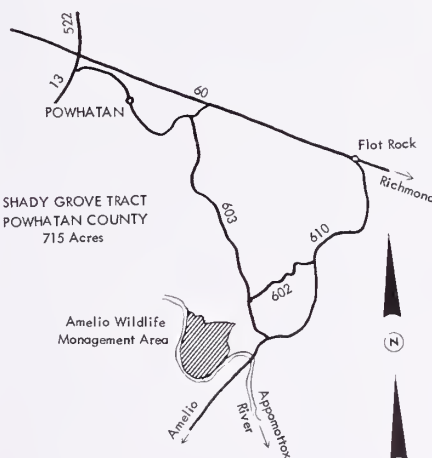
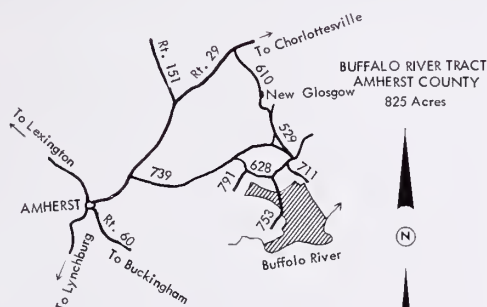
WEST Virginia Pulp and Paper Company's Timberlands Division has added 3,791 acres of its Virginia woodlands to the Commission of Game and Inland Fisheries' cooperative game management program. Game Management Field Coordinator C. H. (Kit) Shaffer and Westvaco Virginia Woodlands Manager J. M. Crockett of Lynchburg worked out the agreement. It includes 2,073 acres in Spotsylvania County, 825 in Amherst, 715 in Powhatan and 178 in Prince Edward. The Powhatan tract adjoins the Game Commission's Amelia Wildlife Management Area separated by the Appomattox River. With this addition, the Game Commission now has cooperative agreements with seven private companies and nine state and federal agencies, giving it wildlife management authority over more than three million acres in addition to its own holdings.

Westvaco owns and manages approximately 76,000 acres of forest land in Virginia which supply a variety of wood products, including pulpwood for the company's mill at Covington. According to Woodlands Manager Crockett, his management agreement is a part of the company's effort to increase outdoor recreational opportunities on the million-plus acres it owns in seven eastern states. The com-

By H. L. GILLAM
Information Officer

pany is coordinating its recreational development program with the Virginia Outdoors Plan to give maximum benefit to the public in areas with the greatest need.

Company lands not included in the cooperative management are also open to the public, provided users first obtain a \$2.00 permit from the Virginia Woodlands Division, Route 3, Box 135-A, Lynchburg. Applicants should include their hunting license number and a stamped self-addressed envelope. Except where otherwise posted and reserved, lands open to permit holders have boundary lines marked with orange paint and Westvaco signs. Maps for a single county showing tracts open to permit holders will be furnished by the company on request. The location maps below show the four cooperative game management areas open to Virginia hunters without the special permit.



Fit For A King

By ALBERT G. SHIMMEL
West Decatur, Pennsylvania

I OPENED the brown paper bag and examined the offering brought by a well meaning neighbor. I appreciated the sentiment that had prompted the gift. I had missed the opening of the season for the first time in many years. To be required to trade the out-of-doors for a desk and my gun for mounds of reports that had to be summarized would have tried the patience of a saint. . . . That I am not! I appreciated the gift. . . . Those four squirrels were the last straw! They had been liberally sprinkled with shot, carried without being field dressed through a long Indian Summer day while blood, heat and juices from perforated digestive tracts had conspired to turn them into a disgusting, inedible mass of filth. I returned them to the bag, took my spade and quietly buried them among the back yard shrubbery. At least they would not be a total loss.

We appraise our game and fish populations using recreational, aesthetic and economic standards. With the democratic idea that these resources be managed to provide the greatest value to the greatest number of our population, we must emphasize the fact that the privilege of participating in the harvesting of our surplus game and fish carries many responsibilities. With the increase of participants in our field sports it is imperative that waste be reduced to a minimum.

The products of the chase are equal to the finest and most expensive gourmet foods, providing they have had proper care from gun to table. This care begins with field dressing. Heat and moisture can ruin both flavor and wholesomeness.

Many sportsmen pride themselves in the skill with which they use rod or gun. They spend long hours in the care of their weapons. They study and practice to achieve flawless techniques, yet they look upon the knife as a minor piece of equipment and regard the function it performs as a disagreeable task, to be performed hurriedly of necessity, to be subtletted, if possible, or to be bypassed altogether. Small wonder that many people are prejudiced against wild meat.

Squirrel hunting is generally a game that requires much quiet waiting. A light scope-sighted rifle is the ideal weapon with light accurate charges. In many districts a hunter does not consider any but head shots. This hunting produces clean, unmangled carcasses. Most hunters field dress a squirrel by inserting the point of the knife at the throat and making one clean cut from breast to tail. The entire viscera is removed, including kidneys, heart and lungs. If the liver is to be saved (some consider it a delicacy), the gall bladder is removed and discarded. The final skinning is postponed until the end of the hunt.

Old Mak was my teacher in the art of squirrel hunting. When he bagged a squirrel, he found a comfortable seat and did a complete job. His theory was that by the time he had completed his task the other squirrels in the vicinity would have had time to resume normal activity. His method was simple. He first cut off the front feet. A cut was then made from the heel of each hind foot to the vent. He worked the hide loose to the tail. He removed the tail bone by pulling it between the halves of a split stick. He then stripped the hide down over the body using his knife at the base of the ears and around the eyes. When the carcass had been re-



Gray squirrel

lieved of its internal plumbing he removed the glands from the armpits of the front legs. After the tailbone and the hind feet had been removed, he stripped the hide back over the body to protect it from dirt. When he reached home it was a simple matter to cut off the head at the eyes. He considered the brain and cheek meat as special tidbits.

Certain animals have glands that impart a wild taste to the meat that many people find disagreeable. The cottontail has a pair of glands resembling white fat that lie along the tip of each shoulder blade. They are approximately two inches long and a half inch wide. Only a thin layer of connective tissue holds them in place. A sharp knife will assist in stripping them away.

Perhaps the most neglected are the game birds. Field dressing is simple. A few feathers are pulled to clear the vent area. A cut is made and the entrails removed by hooking them out with the first two fingers. Some dry leaves or a wad of grass thrust into the opening will keep the body cavity free of dirt. Remove the crop by slitting the skin then working it free with the fingers. Fermentation begins here immediately after death, and if this necessary task is not performed the flavor of the bird at the table is impaired. Examination of the crop will furnish a clue as to where the bird has been feeding and may improve the hunter's chances of a good bag.

Big game should have immediate attention as soon as it has been bagged. Bleeding is accomplished with the opening of the abdominal cavity if it has not already been done by the bullet. Turn the animal on its back and with a sharp knife make an incision from the point of the breast bone to the tail. Free the large intestine at the anal opening, then turn the animal on its side and the major contents of the cavity can be rolled out. Reach into the chest cavity after cut-

ting through the diaphragm and sever the gullet and wind-pipe as close to the head as possible. A small sharp pocket knife is an excellent tool. Remove the heart and liver. A plastic bag makes an excellent container for transporting these delicacies. Don't look for a gall bladder. Deer have none. Wipe out the body cavity and prop it open to cool. With bear, this is of major importance as the fur is an excellent insulator, retaining the body heat and spoiling the meat.

Don't be vain! Get your kill home and the hide off the carcass as soon as possible. The meat will be improved. Aging for several days in a moderately cool place will bring the meat to the peak of primeness. Many butchers and storage plants are equipped to perform these functions, which include cutting and wrapping, at a very modest price.

The lowly woodchuck, much sought by riflemen, becomes a delight at the table when it has not been neglected in the field. Young specimens are preferred but older animals are not to be despised. The glands located under the front legs should be removed. All fat should be trimmed from the carcass before cooking. This is easily accomplished if the animal is frozen. The fat is easily removed with a sharp knife before thawing. Young animals are best either fried or roasted. The older animals are best when ground into chuck burgers. A friend informs me that scraps make a wonderful ground bait for catfish and snapping turtles.

The quality of properly handled wild meat is superior to the finest domestically produced product. Too many inexperienced or deluded cooks think it necessary to disguise the natural flavor with elaborately concocted sauces, condiments or quantities of the robust vegetables (onions and garlic). As a general rule, quick, thorough cooking with a minimum of seasoning makes game dishes that are FIT FOR A KING.

Woodchuck



Big Game Kill Records By County

County or City	1965-1966			1966-1967			1967-1968		
	Deer	Bear	Turkey	Deer	Bear	Turkey	Deer	Bear	Turkey
Accomack	62			52			61		
Albemarle	240	28	16	296	2	72	245	19	32
Alleghany	585	10	199	664	14	147	626	27	61
Amelia	193			85		106	276		67
Amherst	257	14	30	234	3	73	241	22	44
Appomattox	85			25		37	123		23
Augusta	1,317	43	210	1,266	14	223	1,133	49	148
Bath	1,509	6	511	1,818	8	453	1,803	23	289
Bedford	62	9	15	70	4	34	75	14	6
Bland	223	4		236			117	7	
Botetourt	660	16	143	675	9	200	737	25	144
Brunswick	115		36	144		30	144		15
Buckingham	427			533		166	549		86
Campbell	28		9	37		12	36		2
Caroline	968		58	502		76	784		37
Carroll	42			51			59		1
Charles City	157			209		1	234		
Charlotte	32		31	24		36	40		21
Chesterfield	194		45	227	2	91	293		53
Clarke	91			89			86		
Craig	885	7	140	950	10	186	963	16	112
Culpeper	47			61		15	67		21
Cumberland	238		18	260		9	294		8
Dickenson	20			24			11		
Dinwiddie	227		57	261		58	291		39
Essex	157			89		10	88		
Fairfax	15	1		14		4	8		7
Fauquier	175		33	188		64	203		52
Floyd	55			30			23		
Fluvanna	236		12	326		41	470		14
Franklin	66			67			58		
Frederick	556		99	540		103	466		121
Giles	616	5	48	558	1	87	541	6	23
Gloucester	120			89			143		
Goochland	114		10	150		35	155		18
Grayson	399			333			406		
Greene	23	4		43	9		28	18	
Greensville	175			416			339		
Halifax	28		25	37		25	69		17
Hanover	79			104			94		
Henrico	46			34			52		
Henry	4			2			1		
Highland	677	8	369	717	2	305	725	7	132
Isle of Wight	506			389			356		
James City	152			175			156		
King & Queen	262		26	190		32	185		36
King George	437			266			249		
King William	470			178			299		
Lancaster	631			293			532		
Lee	59			36			37		
Loudoun	95			111		17	94		13
Louisa	138		33	144		69	138		37
Lunenburg	49		19	55		17	86		17
Madison	30	17		37	2		22	11	
Mathews	23			26			40		
Mecklenburg	22			46		5	42		1
Middlesex	49			49			62		
Montgomery	11		82	13		116	26		55
Nansemond	477	6		495	6		300		
Nelson	144	10	21	97	1	46	79	13	11
New Kent	153		5	205			220		
Newport News-Hampton	111			49			115		
Norfolk									
(Chesapeake)	626	9		526	6		165	7	
Northumberland	430			242			457		
Nottoway	121		27	175		29	179		12
Orange	40		18	78	1	34	83		31
Page	296	2		309	2	37	207	6	20
Patrick	242			249			223		
Pittsylvania	64		7	63		12	63		12
Powhatan	175		49	219		69	183		34
Prince Edward	59		26	53		33	79		27
Prince George	210		27	253		39	293		16
Prince William	184		42	147		88	141		53
Princess Anne (Va. Beach)	73		1	62			21		
Pulaski	170			185			84	2	
Rappahannock	82	3		149	4		43	4	
Richmond	359			169			149		
Roanoke	8	1	22	3			9		20
Rockbridge	603	8	204	624	8	277	516	13	141
Rockingham	1,427	22	93	1,423	10	92	1,177	47	52
Russell	10			6			3		
Scott	148			93			53		
Shenandoah	787	2	142	875	1	139	768	1	91
Smyth	437	4		376			206	2	
Southampton	1,447			1,211			1,033		
Spotsylvania	96		41	128		59	138		47
Stafford	374		19	246		56	222		38
Surry	835		1	586			240		
Sussex	926			735			791		
Tazewell	87	5		60			40	4	
Warren	375			367		46	305	2	49
Washington	154			159			106	1	
Westmoreland	138			65			70		
Wise	37			31			13		
Wythe	349	2		335	3		209	3	
York	590			305			470		
TOTALS	27,983	246	3,129	26,156	122	4,039	24,934	349	2,406

Turkey harvest figures do not include spring kills



L. L. Rue III photo

Let's Cook a Wild Rabbit Dinner

By MARJORIE LATHAM MASSELIN
Richmond

PERCENTAGE-WISE, the odds are against the rabbit and in favor of the huntsman. When the average person thinks of wild game, it is a juicy haunch or saddle of venison that pops into the mind's eye, yet the number of deer taken in a given season is relatively slight compared to the number of smaller game animals bagged. Of these, more rabbits are available to the stew-pot than any other kind of game with the exception, perhaps, of squirrels.

This being so, it is a good idea to take a lingering look at the culinary merits of wild rabbit. To a diet-conscious generation like ours, one of the most important selling points, if any are needed, might be the fact that rabbit has more protein and fewer calories per pound than anything else you can serve.

Wild rabbit, probably because of the quantity in which it has always been available, is essentially a peasant food. The peasant has been noted throughout history for his ingenuity, and so there are more good tasting and reliable recipes for the preparation of rabbit meat than you would expect—particularly when one considers the dearth of recipes for the preparation of other kinds of game.

The flesh of the wild rabbit is dark and reddish in color; lean and quite "gamy" in flavor. It can also be tough and sinewy on occasion, but it doesn't have to be. Like most game and game birds, rabbit should be hung for a day or two—or more, depending on the weather—in order to season and become "high". Besides enhancing the flavor, this treatment serves also to tenderize the flesh somewhat. Seasoned or not, the use of a tenderizer salt is definitely in order, especially for the larger, older and heavier animals. Unlike most other game and game birds, rabbit is cooked well-done.

Having been seasoned properly, skinned and drawn, the rabbit is cut into serving-size pieces, so that the cook has 2 shoulders, 2 legs and 2 breasts, with the lower back left in one piece. From here on the cook is king—or queen—and what happens next is purely a matter of personal taste and ingenuity.

A young three-pounder can be floured and fried crisp in much the same way that a chicken is. You will need to cook it a bit longer than a young chicken, and the best way to assure that it is cooked through, juicy and tender, is to continue the cooking in the oven for thirty minutes or so after the rabbit has been browned crisp in the frying pan.



Commission photo by Kesteloo

Conclusion of a successful hunt yields beginnings of a delicious wild rabbit dinner.

A classic German dish that lends itself equally well to the use of young and tender or old and tough animals is "Hassenspeffer." Since this is one of those old peasant recipes mentioned earlier, there are almost as many versions of it as there are people who have prepared it. In general most recipes agree on the use of a marinade and cooking method, but disagree on the way to "finish" the gravy. Since there is wine in the marinade, I prefer to keep the gravy dark and rich, but many people add sour cream. You might like to try it both ways, adding, perhaps, some distinctive seasonings of your own. This is one good recipe.

Hassenspeffer

Marinate the cut-up rabbit(s) overnight or longer in a mixture of red wine, a few black peppercorns, salt, a small bayleaf, 2 or 3 sprigs of fresh parsley and a medium-sized onion, sliced. Be generous with the wine; it should cover the meat. It can be "cut" a little bit with water, but really *very* little.

Try to consider, when preparing wild game, that the meat itself is free. If you look at it this way and chalk up the costs of the hunting license, the guns, ammunition, equipment and hours spent hunting it to "hobbies, sport, general good health and well being," then you realize that you can afford to be extravagant in the material used to prepare wild game. This is really the secret to successful game cookery—the use of prime ingredients.

When ready to start cooking, remove the pieces of rabbit meat from the marinade, flour them and brown them in good hickory smoked bacon drippings that you have carefully saved for just this purpose and that are mixed with an equal amount of pure butter. Set them aside.

For each rabbit, peel 12 small white onions that are about an inch or so in diameter, 12 tiny young carrots and 12 "button" mushroom caps. If necessary to use large carrots, cut each one into two or three segments to make twelve segments. If you can find some tender, young parsnips, they can be added or they can be used in place of the carrots. I have rather given up on parsnips from the market; they are always too big, too limp and too "woody" to be interesting. If you live where you can grow parsnips yourself, you probably do, so I need not tell you that when they can be pulled fresh and small they add a wonderfully good

flavor to almost any stew, and, of course, that is essentially what Hassenpfeffer is—a stew.

These vegetables should now be browned in the remaining bacon fat and butter mixture that you used to fry the meat. Set each aside, separately, as they are finished, until you are ready to assemble the stew.

Use a large copper or heavy iron Dutch Oven, and alternate layers of rabbit with layers of these vegetables. Strain the marinade into the kettle and cover it. Either simmer at low heat at least two hours, or pop the dish into the oven at 325 degrees for the same length of time. The meat should literally fall from the bones when it is ready to eat, and the wine should be pretty well reduced.

Lift the pieces of rabbit and the vegetables onto a hot platter, and, if necessary, reduce the gravy a bit more. It will be rich and dark. To thicken it, measure 1 tablespoonful of flour and 1 tablespoonful of drippings from the frying process per cup of gravy. Brown this mixture of flour and drippings and strain the hot liquid into it, stirring constantly to keep it smooth. Serve this separately in a sauce boat.

Around the edge of the platter, heap piles of broad egg noodles that have been very lightly buttered—just enough to keep them from sticking together en masse—and sprinkle

If you have gone so far as to have Hassenpfeffer and Sauerkraut, you might as well have Kartoffelklosse, too. These potato dumplings can be excessively heavy. They can also be very light and fluffy: I have had them both ways! Real old fashioned German potato dumplings are extremely hard to make so that they are edible, and even a few real old fashioned German cooks that I know have been willing to admit that I have a point there. When making Kartoffelklosse, the watch-words are planning and speed. They can be cooked with the sauerkraut or with the Hassenpfeffer, but they must be cooked on top, without being disturbed, and the stuff on the bottom has got to be boiling. That means that it will probably burn on the pan before the dumplings are cooked through, or that you will get nervous and peek too soon and the dumplings will be a soggy mess. The alternative is to cook them separately in boiling, salted water and have everything else ready to go to the table the instant the dumplings are done.

In general, the fewer ingredients that go into dumplings of any kind, the lighter they will be. For plain ordinary dumplings, flour, baking powder and water are IT. Recipes that call for eggs, shortening, etc. are going to be heavier than lead. Adding potatoes is not going to make them any lighter, either; but making them with dehydrated potatoes will produce a reasonably good approximation of the taste of a kartoffelklosse without being nearly as heavy as if made with fresh potatoes. Try them this way.

Kartoffelklosse

Take 2/3 of a cup of dried potato flakes, 1 teaspoonful salt, 1 cup of flour and 2 teaspoonfuls of baking powder. Moisten with just enough water to make a light, airy dough. Do not overmix. Drop these into boiling salted water, by the spoonful, cover tightly, reduce the heat just enough to keep it from boiling over and cook about 8-10 minutes. Serve at once.

Just about any recipe for chicken or hen can be adapted to the use of rabbit meat. A well seasoned rabbit even if it is a bit on the mature side, will be tasty and relatively tender if properly cooked. As a general rule, it is better to overcook young rabbit with moist heat—that is, to make a stew, ragout, etc.—than it is to fry or broil or barbecue an old tough customer and hope it will taste like a young 'un. It won't!

The rabbit is cut into proper serving pieces before cooking.

Commission photo by Kesteloo



Commission photo by Kesteloo

Skining and drawing rabbits is relatively simple.

them with poppy seeds. Spatzle is also very good (see article on venison) or even plain old mashed potatoes.

A salad of finely shredded green cabbage, tart apples with the crisp red skin left on and a sprinkling of currants goes perfectly with Hassenpfeffer. The dressing should be mayonnaise, preferably some you make yourself so that you know what is in it, and it can be thinned slightly with apple juice.

Hassenpfeffer, prepared essentially in the same manner but without the addition of any vegetables, is awfully good served with sauerkraut. American sauerkraut is usually pretty mild and seldom requires the rinsing that the European product needs. Simply cook it, covered, with the addition of a grated, peeled raw potato and two peeled chopped apples per pound of sauerkraut. You may need to add a little water as well. It should be thickened with a white roux (equal parts flour and butter that is not browned) so that it holds together and is not at all "soupy". For each three pounds of rabbit meat, prepare one pound of sauerkraut.

dodendron calendulaceum, which seems resolved to explore the spectrum of all the oranges. He who is sated with the color of May can ponder the lore of its flora. The Whorled Loosestrife, *Lysimachia quadrifolia*, has opened its little yellow blossoms since our pioneer fathers placed it on the yokes of their oxen teams to make them work in harmony! By May you can predict the weather with the Poor Man's Weather Glass, *Anagallis arvensis*, because the plant reflexively closes its quarter inch scarlet petals with the approach of a storm. The secretive flesh-brown flower of *Asarum canadense* leads to a race of wild ginger. The smell of the Garlic-Mustard, *Alliaria officinalis*, that grows by the North Holston riverbanks is surpassed only by the rank strength of the ramps, *Allium tricoccum* of Whitetop. How often have I pondered the weird, wild loveliness of a Lady Slipper, *Cypripedium acaule*, or plucked from the crevices of trailside stones the exquisite wild Lily of the Valley, *Convallaria montana*, to be plunged, as was Tennyson, down into the depths of being itself.

Flower in the crannied wall,
I pluck you out of the crannies,
I hold you here, root and all, in my hand
Little flower—But if I could understand
What you are, root and all, and all in all,
I should know what God and man is."

A hot and sultry June afternoon I spent at the seashore, and that still in Washington County. Sea shells, *Dicellomus*, lie yet buried in the mud in which they fell in the Paleozoic past. Our landlocked county was then the shore of an ancient sea, and these feeble folk were our ancestors here. I unearthed the fossil brachiopods one summer day from the crumbling shales where they had slept for half a billion years. The changes of time compacted the sediment to rock, and the rock buckled upward, and the seas receded. The Appalachians rose from the sea. A million million rains washed and washed to strip away the overburden, peeling off the layers above, and exposing the shale. Now and again its marine cargo weathers out so anomalously far from the sea. Fossil sea shells where Mumpower Creek cuts the Nolichucky shale in Big Ridge north of Bristol? Yes, they are there—small but unmistakable relics of a Cambrian fauna, tokens of a remote abyss in time when these hills of home were conceived in a watery womb subsequently to be brought forth in the labor of the Appalachian orogeny.

Once upon a July twilight I was gifted all undeserved with the loveliest of sunsets. The sun plunged behind the old snag that stood as a sentinel halfway up the western knob on the skyline near home, terminating the day with a blaze of glory that fired an orange red across half the spacious firmament. It was as though the sinking sun had resolved to exhaust itself in activity and color. Dusk was spent in hues of crimson and violet that lined the deep purple stratocumulus, then to yield to encroaching darkness, but not before a bit of that July became part of me forever.

In August darkness, once, I was meddling again, prowling about the haunts of a screech owl who dwelt in the old big willow on Sinking Creek. Binoculars in hand, I knelt behind an overgrown post in the fence-row, eyes glued to an owl-sized opening well up the trunk. The darkness was falling rapidly now, yet I hoped to spy the little fistful of feathers whose tremulous whinny so disrupted the silence of the night. I could have spared myself the bother of the binoculars, for we soon enough met in closer contact than seemed hospitable. Meddling I was, but I meant no harm;

yet the owl misread my intentions, or resented my peeping, and attacked me. Out of the hole he (or could it have been a she?) came, a tufted rufous projectile propelled by a silent gunpowder, swooping into my head and hair, wings flapping, talons curled, and finishing with a shriek that must somehow lie behind the rebel yell. The grumpy little night owl dwells yet, for all I know, in the willow in the bend of the creek. That one spot in Washington County has for me an early curfew. It's been off my limits ever since.

The broadwinged hawks fly south over us in September, diurnal birds of prey that have been my symbols of the wild and the free. They, I ought to add by contrast, never seemed to resent my curious watches. September 22, 1962, I lay flat on my back on a rock outcropping in the sunshine of a still day, sprawled across the county line, high atop Clinch Mountain at the Mendota Firetower. The bin-



L. L. Rue III photo

One October day I got the drop on an old buck.

oculars were necessary now; even with them I strained higher still to mere specks of grey in the blue and white of the early autumn sky. Counting with me was T. W. Finncane, ornithologist and co-ordinator of the fall hawk count. "Wow, there must be hundreds of hawks up there!" I exclaimed, realizing the size of the flight. I counted rapidly, scanning the open distance ahead to make sure I had spotted the lead hawks. This one was ideal for counting, strung out in a narrow line that followed the mountain crest. Fifteen minutes later, with a chain of hawks past us a mile long, the flight cut off at 830. Earlier they had come in low, pausing at the tower to circle for altitude. After a lull, more followed. By the close of the day, we had the

highest count in the history of observation at the Mendota tower, 2,369 broadwings, which with a handful of redbills, ospreys, and other hawks brought the total to 2,379 hawks. Annually since, a couple or more September days I have reserved as the self-appointed inspector of hawk flights over the Clinch, and I have done my duty well. I remember only one owl, but hawks by the thousands: 1941 hawks, mostly broadwings, but others as well, Cooper's, sharpies, redbills, ospreys, redshouldered hawks, a few marsh hawks, and a solitary eagle have been my portion of the 25,758 birds of prey counted by observers since 1959 from the wind-swept tower.

October has always converted me into a deerstalker. Just above Shaw Gap in Feathercamp woods I inched upwind through the yellow and red of hickory and oak in the fall. I heard it; then again I didn't—a rustle that seemed something more than just a breeze. An hour of slow motion stealth brought me not a hundred yards. But my quarry was unaware. I had the drop on an old buck, surrounded by three doe and a couple of fawns. Would that I had my grandfather's Winchester back home on the rack! But the season was not yet open. Maybe it was just as well, for the longer I watched, the more I had to remember: eight points counted and recounted, the twitch of their tails, their nervous looks, the suckling fawns. After half an hour's intimacy with the stag and his own, a careless step and a snapped twig spooked them all. The memory ends in a snort and a half dozen white tail flags. But on the return there was one reward more. There, on the trail, like a barefoot human, was unmistakably the print of a bear. Shades of Wilburn Waters!

It seemed hardly worth the bother one grey mid-November day to look again at the sterile, thin, cut-over woods in the nearby knobs. Can any good thing come from Mud Hollow? From Moek Knob? I had long since put it down as rotting stumps and brush. Home I came almost empty handed, collecting nothing more than a few tiny mushrooms from inside a doty log. Perhaps because I had so little, I looked more closely. It was the plainest of toadstools, tiny and tan, until that evening late I turned off my study light to discover the weird-green luminescence of *Panus stypticus*. Cap and stalk and especially the gills gave off a soft luminous fire. The faint cold light that braved the winter's dark left me a surviving glow. Who can tell why this uncanny emanation lights a rotting log?

Late in December and late in the day, years ago now, I overlooked from afar the length and breadth and depth of the county in which I have rooted so deeply. The day was spent in the climb up High Knob, visibility zero. Rime ice covered all, and fog covered that. At the summit, the cloud cover thinned; the late evening sun was beginning to set. I stood aloft and clear. At my feet a pillowy cumulus sea filled the intervening miles southeastward, masking all terrain until it washed the flanks of the Clinch. Beyond, everything was crystal clear, the rare visibility of cold winter skies after rain. In a single gaze I embraced Mendota eastward to Beech Mountain and Whitetop. From Tumbling Creek, and the tower on Hayter's Knob, I swept to Brumley and Hidden Valley, then over the county and across the valley to Holston Mountain. A fair landscape indeed! What wonders and pleasures lie in the realm your boundaries enclose, from the majesty of Abrams Falls to the mystery of Ebbing Spring, from limestone sinks to green pastures and templed hills. *De profundis!* What abundance and splendor are compacted here! Lord, bid time and nature gently spare these hills that once were home.

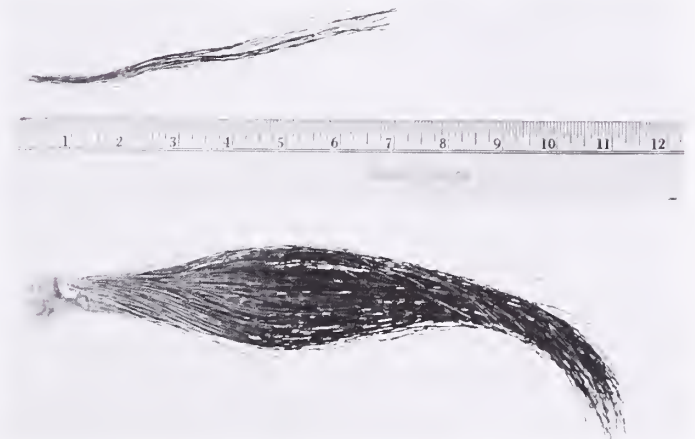
Bearded Bird (Continued from page 5)

Over a period of seven years (1958-64) 6064 birds were examined by technical personnel. The percentages of these turkeys were as follows: adult gobblers-19%, juvenile gobblers-31%, adult hens-21% and juvenile hens-29%.

From the above data perhaps the hunter can estimate his chance of killing a legal turkey this fall east of the Blue Ridge. Through the years the autumn and winter harvest shows an approximate 50-50 gobbler-hen ratio. However, as we have stressed previously, the beards of the adults are the only reliable and legal criteria. Therefore, if the past kill figures are significant, only *one turkey in every five seen* will be an adult *bearded* bird. It would obviously be foolish to shoot at every turkey observed—at those odds!

It appears that to be legal and successful, it will almost be necessary to flush the turkeys and then call them close to a blind in order to make a positive identification. This is the old traditional method of hunting turkeys, and those sportsmen who yelp or call will swear that there is no more thrilling sport in the world.

The fall yelping of turkeys is just as challenging (or even more so) than springtime calling. One uses the same basic call with the yelper regardless of the season of the year. Naturally, in the springtime the adult gobbler is sexually



Compare the gobbler beard, below the rule, with the thin, wispy appendage that sometimes (but infrequently) adorns an old hen.

motivated by the lure of the hen call. During the fall season turkeys are usually found in family flocks. They have to be flushed or separated before they will answer and come to the call. Then all ages and both sexes of turkeys will converge at the imitated old hen call.

Occasionally groups of adult gobblers gang up together in the autumn and winter. Should the hunter be fortunate enough to scatter them, he will have it made! For reasons unknown, separated old gobblers are often the easiest to call to a blind. This, however, is in direct contrast to the skill required to call up a solitary old hermit tom.

There are already a number of dedicated Virginia turkey hunters who voluntarily hunt only gobblers in the fall and winter months. Some sportsmen obtain their kicks by hunting trophy turkeys only. Others are motivated by a desire to perpetuate their own sport by refusing to shoot the hens that lay the golden eggs. Whatever the motive, selective hunting requires a great deal of self control because many shots must be passed up when identification is uncertain.

This winter sportsmen who intend to hunt turkeys in the Piedmont and eastern Virginia counties would be wise to adopt and practice the following motto: "*LOOK FOR THE BEARD INSTEAD OF THE BIRD.*"



Edited by HARRY GILLAM

Double Trophies Mark Successful Season



Robert Morris of Fairfax displays two 6-point racks from deer he was lucky enough to bag last hunting season. The largest is from Caroline County and the small antlers are from a Bath County buck.

15 New Game Wardens Finish Training School

On October 4, 1968, fifteen Game Warden Trainees graduated from the three-week long school held at the State Police Headquarters in Richmond. These new wardens, the newest additions to the Law Enforcement Division of the Virginia Commission of Game and Inland Fisheries, were chosen for the positions from more than 400 applicants.

The comprehensive syllabus of instructions utilized in the course covered facets of the profession from game and fish management to hunting and boating safety. Each of the graduates will serve an apprenticeship to a full-time warden for a period of "in-service training." Following this, the individuals will receive a permanent assignment in some area of Virginia as a fully qualified game warden.

Those graduating in the 1968 class and their new assignments were: John L. Elgin, Richmond, to Accomack County; Donald W. Hinehey, Richmond, to Virginia Beach City; James A. McClenney, Chesapeake, to Southampton County; Morgan A. Wilkinson, Jr., Richmond, to Dinwiddie County; Douglas E. Blosser, New Market, to Buckingham County; Clarence A. Emerson, Dry Fork, to

Mecklenburg County; Donald W. Gentry, Fredericksburg, to Essex County; Joseph D. Dedrick, Waynesboro, to Spotsylvania County; Oliver P. Ritter, Winchester, to Prince William County; William B. Tuttle, Craigsville, to Shenandoah County; John W. Heslep, Rich Creek, to Bath County; William E. Wilmoth, Keeling, to Bedford County; Rex W. Crawford, Bristol, to Craig County; Victor W. Edwards, Vansant, to Giles County; and Beecher H. Perry, Coeburn, to Smyth County.

Also attending the class was SFC David H. Fletcher, U. S. Army, A. P. Hill, Virginia.

Members of the Game Division who attended the course included Beverly Amber, from Goshen; Oliver Burkholder, George Washington National Forest; W. A. Crowder and Verlon Smith from Jefferson National Forest and Fred Strickler from Gathright.

Game Commission Director Elected To Office in International Group

Chester F. Phelps, Executive Director of the Virginia Commission of Game and Inland Fisheries, was elected Second Vice-President of the International Association of Game, Fish and Conservation Commissioners at that group's annual meeting in Phoenix, Arizona, early in September. He had served as Chairman of the group's Executive Committee during the year just ended and served as an executive committee member for the two years previous. Phelps began work with the Virginia Commission of Game and Inland Fisheries in 1939 and has served as its Executive Director since 1958. He was recipient of the Governor's Award as Conservationist of the Year in 1966 under the program sponsored by the Virginia Wildlife Federation.

Fishing License Revenue Jumps 40%

Revenues from the sale of fishing licenses were up 40% during the last quarter of the 1967-68 fiscal year when compared to similar figures from a year ago, according to Game Commission Fiscal Division Chief Sam J. Putt. The dramatic but unexplained spurt in fish-

ing license sales fell on top of an approximate 6% increase for the first three quarters of the fiscal year. These combined increases put fishing license revenues for the year past the \$1 million mark, the first time this has happened in the Commission's history.

Contract Awarded For Amelia Fishing Lake

The contract to construct a 105-acre public fishing lake on the Game Commission's Amelia Wildlife Management Area some 30 miles southwest of Richmond was awarded to the Wilk Construction Company, Inc., of Farmville. Construction began October 10 with a completion deadline of July 7, 1969. The low bid price was \$105,854.85 for construction of the dam and related facilities.

The lake will be located on the western edge of the 2,067 acre tract. It will be slightly over a mile long, and have some three and one-fourth miles of shoreline. The lake will be 800 feet wide at the dam. A fisherman access point will be provided about midway on the east side of the lake. A separate one-acre fish holding pond will be constructed below the dam for fish management purposes. The lake is a Dingell-Johnson federal aid project so 75% of the construction cost will be paid from federal funds accruing from a 10% excise tax on fishing tackle.

The lake will be stocked with bass, bluegills and channel catfish. It will probably not be opened to public fishing until 1971. The watershed ratio is 13:1, well below the 25:1 considered maximum for effective fish management. The lake can therefore be intensively fertilized for maximum fish production. Four clumps of standing trees approximately 50 feet by 200 feet will be left in the lake near the eastern shoreline for fish shelter. Evidence has shown that such cover areas effectively concentrate fish for anglers.

Two other Game Commission lakes, 300-acre Laurel Bed Lake in Russell County and 75-acre Wythe County Lake near Rural Retreat, were completed recently.



YOUTH AFIELD



Edited by ANN PILCHER

Farm Pond Lunkers



Left: The third cast with a new plug given by his grandfather brought 14-year-old James C. DeNoon this citation 8 lb. 11 oz. largemouth bass from Powhatan's Willis Pond early in September. At right, Rodney Mullins of Clintwood holds his foot-long bluegill catch, taken in July from a farm pond with a casting rod. The sunfish exceeds by 6 ounces the one pound Virginia Freshwater Citation minimum weight for sunnies.

Litter

Every citizen should be concerned with what is happening to his land. I am 13 years old and concerned about what is happening to that part of *public* land that *I* own. What am I concerned about? The litter problem.

Litter is everywhere. I have found it while hiking on the Appalachian Trail and the C & O Canal, while camping on National and State Forests, while hunting at Wildlife Management Areas, while fishing in lakes and streams. What should you do with litter? Burn it, bury it, or bring it home. Keep the litter in your bag, pack, box or pocket till you get home or until you find a trash can.

Living in litter is not for people. Litter causes sickness, injury and disease. It clutters up our lakes and streams, making them unfit for recreation. Litter costs tax dollars and makes good camp sites unfit for living. It's everyone's job to clean up litter because it's everyone's America. Let's make it a clean one.

—William J. Morris
Arlington

Unwelcome Hunters

Our family has a small cabin in Tazewell County where we go on vacation. It's wonderful up there. We have a creek surrounded by trees—oak, maple, hickory, and dogwood. Sometimes we play on the rocks in front of our "house in the woods." Or we might go hunting with Kala, our Irish setter, though we have never even scared an animal.

The only thing we don't enjoy at our cabin comes in the fall at Thanksgiving. HUNTERS! We aren't opposed to them hunting, but we do wish they would pick a good time to do it and ask permission.

Time: 12:00 midnight. Place: our cabin. We hear a shot ring through the air. A shotgun shot. My father gets out of bed, puts on his pants and shirt and leaves the cabin.

He leaves in hope of finding the hunter and asking him to please wait until morning to hunt.

We not only care about hunters because of our sleep, but because our grandparents are farmers. Regardless of "no-trespassing" signs, hunters tramp

across their fields to get to good hunting grounds.

Not only that, but it's dangerous for hunters to be on our land without us knowing. My father has almost gotten shot twice.

Another reason we don't like hunters on our land without us knowing is our cat. When in a tree she looks exactly like a squirrel, a familiar target for a hunter. If the hunters would let us know they were hunting on our land, we would be glad to put our cat in the cabin so she wouldn't get shot accidentally.

Our land may be a "happy hunting ground" to hunters, but hunters on our land without our permission doesn't make us very happy and isn't very safe either.

It's not just our family which this happens to, but this problem exists in many counties in western Virginia. Hunters, *please* get permission from landowners before hunting on their land, for the sake of safety, if nothing else.

—Lucy Lyle Neal, Age 12—Richmond

4-H Youths Aid County's Conservation Effort

David Johnson, J. B. Hodges, and Thomas Allen Melton stand in their Goochland County feed patches, planted last spring to provide more food and cover for wildlife, particularly birds, deer and rabbits. Eighty-three boys and girls, 4-H'ers under the direction of Mr. Earl C. Truett, Jr., Goochland's VPI Agricultural Extension Agent, participated in the club's conservation planting project.



ON THE WATERFRONT



Edited by JIM KERRICK

Fumes Are Dangerous

Are you the owner of an inboard motorboat? Did you know that 80% of all the fires and explosions reported last year took place aboard inboards?

The reason for this is, of course, that gasoline fumes accumulate easier in the enclosed compartments of a boat powered by an inboard engine. But these fumes can be controlled.

1. Before you start to fuel, close all portholes, hatches and windows. Check the condition of the fuel tank vents!

2. Don't smoke or turn on electrical switches while fueling. Keep the fuel line nozzle grounded with the mouth of the tank opening.

3. Stop all engines, motors, or devices which could produce a spark.

4. Make sure no spilled fuel seeps into the bilges, and wipe up all spills.

5. When you've finished, open all compartments and wait five minutes to let what fumes may have been trapped escape. When all odor of gasoline has disappeared, start your engine.

Uncertain about your present ventilation system? The Coast Guard puts out a handy pamphlet: "Ventilation Systems for Small Craft," (CG 395). U.S. Coast Guard, Washington, D. C. 20591.

Mayday . . . Mayday . . . Mayday!

Spoken, the word "Mayday" can bring almost instant response and assistance. But "Mayday" carries the thought of disaster, and should only be used when you need immediate help.

Calling "Mayday" isn't the only way to ask for aid. The Coast Guard recently provided a list of other signals a boatman can use. Familiarize yourself with these signals so you'll be able to use and spot them. Not only will this give you a better chance of being rescued, but will aid the other boaters also.

NIGHT SIGNALS:

Flames on board draw immediate attention. When boating, anything which will "contain the flames" will act as a fire-holder. (An empty metal tackle box or bailing bucket work quite well.) Fire

makes an excellent signal, but *always* take special precautions when using it. *Never* leave it unattended.

Hand-held flares are also a good means of signaling distress at night.

DAY SIGNALS:

Raising and lowering your outstretched arms is an effective, and probably the simplest, signal. Do it slowly and repeatedly. To improve your chances of being seen, place a handkerchief or other material in both hands. (Make sure you stand on your boat's highest vantage point, and remember color contrasts.)

The "CANADIAN Surface-to-Air" signal, a recently recognized way of distress signaling in the U.S., consists of a 72 inch by 45 inch fluorescent ORANGE-RED cloth. This cloth has an 18 inch black ball and an 18 inch black square, 18 inches apart, on the cloth's major axis.

This signal is especially "eye-catching," and you can tie it to your boat's cabin, across a hatch, or anywhere; as long as it can be seen from aloft.

A smaller hand-held signal, the International Orange Flag, is also eye-catching, easy to store, and easy to use. (A life preserver or cushion of International Orange color can also be used—simply wave them back and forth.)

There are, of course, several other recognized distress signals you can use when emergency strikes afloat. A complete list of these is found in the Coast Guard's "Official Recreational Boating Guide." It's yours for 45 cents from the Superintendent of Documents, Government Printing Office, Washington, D. C. 20402.

Special Notice

The U. S. Weather Bureau advises the following changes in the existing Coastal Weather Warning Terminology:

"Whole Gale Warnings" will be referred to as "Storm Warnings"; the "Whole Gale Warning Flag" will be referred to as the "Storm Warning Flag."

"Storm Warnings" will be issued and "Storm Warning Flags" flown whenever the wind velocity is expected to equal or exceed 48 knots.

"Hurricane Warnings" will be issued only when a tropical cyclone is observed and when such a cyclone is expected to develop wind velocities equal to or exceeding 64 knots.

"Hurricane Warning Flags" will be flown in anticipation of a tropical cyclone accompanied by wind velocities equal to or exceeding 64 knots.

In the event that an extratropical storm is observed, it will be designated as a "storm" regardless of whether or not the wind velocity is expected to exceed 64 knots.

For Safety's Sake! Know the "4-A's"

Approved, Acquainted, Assigned, Available. These "Four A's" can guide you to proper use of lifesaving devices when boating.

It is estimated that 2 million new boating enthusiasts will take to the water in 1969. Many will be unfamiliar with boating, and especially with choosing the right safety equipment.

Lifesaving devices are the most important of all safety equipment. Whether you choose cushions, jackets, or vests, following the "Four A's" will help you learn to use the devices properly. Here's the formula:

Approved: Make sure every piece of lifesaving equipment you buy carries the "U. S. Coast Guard Approved" stamp.

Assigned: An approved device should be carried for every person on board, and each should know where his is located.

Acquainted: Learn to use the safety devices yourself, then show everyone on board their proper use. (Children and non-swimmers should wear one at all times and everyone should use them during rough weather.)

Available: Always keep lifesaving devices handy so they can be obtained immediately when needed.



Bird
of the
Month:

Mallard

By DR. J. J. MURRAY
Lexington

THE mallard is so widely distributed and has been so generally domesticated that it is not always easy to tell whether any particular individual is truly feral. Some years ago a wild female mallard mated with a mongrel domestic drake at the Big Spring near Lexington. The Virginia Society of Ornithology was meeting in Lexington at the time. The female mallard was so tame that she had to be pushed aside for the visitors to see the 10 eggs. These eggs were finally placed under a hen. When they hatched, the young looked like black ducks with the mallard speculum (wing marking). The next year she made another nest, from which 30 eggs in all were removed one by one. Such matings are much more common in Tidewater Virginia.

This is one of the most generally distributed species of duck in Virginia, nesting at least in small numbers all over the State, but occurring chiefly, of course, in fall, winter, and spring. It breeds in some numbers on the V. P. I. pond at Blacksburg. The peak count at Assateague was 1162 on December 29, 1955. There is a small breeding population there. It nests, at least in small numbers, in the Washington area.

The mallard is probably the best known of all our ducks.

The marks of the male are unmistakable, the green head, white ring about the neck, reddish breast, white tail, and bluish speculum with two white borders. The female is much duller, resembling a light-colored black duck, but with the speculum of the male mallard.

Individual mallards vary much in size. Both sexes give a loud quack, the female's being harsher than the male's.

The nest is usually placed in or near the water. Like the nests of most of the ducks, it is built of reeds and leaves, and lined thickly with down which the female pulls out of her breast. The number of eggs, up to 14, varies greatly from nest to nest. The eggs vary greatly also in coloring, from yellowish to greenish. It takes between three and four weeks for the eggs to hatch.

The scientific name of this duck is *Anas platyrhynchos platyrhynchos*. The first part means "duck"; the second and third mean "wide-billed."

Superlatives can be freely used of the mallard. It is one of the most widely distributed ducks in the world. For human use, as the producer of eggs and for food, it is certainly the most important duck in the world. The eggs are good, the meat of the bird delicious.

GIVE

Virginia Wildlife

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